

Donaldson-Thomas theory is an enumerative theory counting sheaves on smooth 3-folds. The “classical” setup involves sheaves of rank 1 (ideal sheaves of subschemes of codimension at least 2).

We will give an overview on the subject with special focus on the known results in the higher rank case.

In particular, we will see how to use Quot schemes to compute higher rank DT invariants in several flavours:

enumerative, motivic, cohomological, K-theoretic. Joint work with Nadir Fasola and Sergej Monavari.